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Suppressive properties of composts are determined by their raw materials

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Abstract

Plant diseases occur as a result of infection by microorganisms, primarily fungi. To control these diseases, farmers use chemical pesticides, which can be harmful for environments. Therefore, alternative methods to control phytopathogens are needed. In our study we focused on the use of composts to control pathogenic Fusarium oxysporum in tomatoes and identify what properties and mechanisms are responsible for the disease suppressive nature of composts. The raw materials used for compost preparation were chicken manure, swine manure, cattle manure, corn and straw. Unsterilized and sterilized variants of composts were used in the experiments. Sterilization of compost had different effects on composts containing different primary substrates indicating primarily abiotic character of suppressiveness of composts prepared on the basis of chicken manure, primarily biotic character of composts prepared on the basis of swine manure, and mixed character of suppressiveness of composts prepared on the basis of cattle manure.

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Keywords

Biocontrol organisms, Composting, Phytopathogen, Suppressiveness